

**Physiological and phylogenetic comparisons between
Psychrobacter strains isolated
from Siberian and Puerto Rican samples**

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Permafrost represents a unique ecosystem that has selected for the survival of bacteria at sub-zero temperatures for prolonged periods of time. Since low temperature is a predominant environmental characteristic of our solar system, bacteria isolated from the Siberian permafrost have been selected as models to study the impact of low

temperatures on the responses and evolution of organisms. Vishnivetskaya *et al.* (2000) developed strategies for the isolation of aerobic, oligotrophic bacteria from ancient permafrost sediments and successfully isolated *Psychrobacter* strains from permafrost samples extracted from diverse depths and geological ages.

Since the bacteria isolated from the permafrost have been exposed to extreme low temperatures for millions of years, it is expected that the traits that have been selected for in the permafrost habitat will not be as frequent in isolates from warm environments like Puerto Rico. In previous reports, we described the successful isolation of *Psychrobacter* strains from Puerto Rican mangroves and fish using *Psychrobacter*-specific 16S rRNA primers. The current presentation includes a comprehensive description of the *Psychrobacter* strains isolated from Puerto Rico, emphasizing the growth and respiration rates comparisons between the Puerto Rican and Siberian strains under a wide range of temperatures (0°-42° C). A phylogenetic analysis, based on *gyrB* and 16S rDNA genes, of the newly isolated strains and type strains will also be presented.